



18/13

SEQUENCE LISTING

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Senter, Letha
Davidson, Eric
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0120 Regulatable, Catalytically Active Nucleic Acids

0130 10139-3013

0140 09 893,119

0141 101-06-14

0150 07 212,097

0160 1000-06-15

0160 00

0170 Patent In version 3.1

0210 1

0211 1.0

0212 DNA

0213 Artificial Sequence

0210

0213 Engineered Aptazyme

0400 1

taattattacc cagggaattat atcagatgc atgtaccat gcagagcaga ctatatctcc 60

acttggttaa agcaagttgt ctatogtttc gagtcacttg acctactcc ccaaagggat 120

agtcgttaa 129

0210 1

0211 1.0

0212 DNA

0213 Artificial Sequence

0210

0213 Engineered Aptazyme

04 0 2

ggttgagtat aaggtgactt atacttgtaa tctatctaaa cggggaacct ctctagtaga 60

caatccogtg cttaaattata ccagcatcgt cttgatgcc ttggcagata aatgcctaac 120

gactatccct t 131

4310 3
 4311 75
 4312 DNA
 4313 Artificial Sequence

 4320
 4321 Engineered Aptazyme

 4400 3
 4401 gataacga ctacatatag ggatcaacgc tcagtagatg tttcttggg ttaattgagg 60
 4402 acagagtata aggtg 75

 4410 4
 4411 89
 4412 DNA
 4413 Artificial Sequence

 4420
 4421 Engineered Aptazyme

 4430
 4431 misc_feature
 4432 Engineered Sequence

 4440 4
 4441 atagctaca atatgaacta acgtagcata tgacgcaata ttaaaccgga gcattatgtt 60
 4442 agataaggt cgttaatttt accccggaa 89

 4450 5
 4451 131
 4452 DNA
 4453 Artificial Sequence

 4460
 4461 Engineered Aptazyme

 4470
 4471 misc_feature
 4472 (77)..(77)
 4473 n=a,c,t, or g

 4480
 4481 misc_feature
 4482 (103)..(108)
 4483 n=a,c,t, or g

 4490 5
 4491 acctgagtat aaggtgaatt ataactagtaa tctatctaaa cggggaaact ctctagtaga 60
 4492 caatcccggtg ctaaatnata ccagcatcgt cttgatgcc ttggcagnta aatgcctaac 120
 4493 gaatatccct t 131

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<220>
 <223> Engineered Aptazyme

<230>
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<230>
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 <233> Engineered Sequence

<400> 6
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 cagataaggt cgtaaatctt accccggaat tctatccagc t 101

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<230>
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 <232> (37)..(37)
 <233> n=a, t, g, or g

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 nnnnnnnnnn nnnnnnnnnn nnnnnngagg ttaggtgect cgtgatgtcc agtcgc 116

<210> 8
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 <212> DNA
 <213> Artificial Sequence

<220>
 <223> primer

<400> 8
 ttctaatagc actcaactata 20

<210> 9
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>

4203- primer
 4400- 9
 ggaactggac atcaagag 18

 4210- 1
 4211- 36
 4212- DNA
 4213- Artificial Sequence

 4220-
 4223- primer

 4400- 10
 attatataag actcaactata ggacctcggc gaaagc 36

 4210- 11
 4211- 60
 4212- DNA
 4213- Artificial Sequence

 4220-
 4223- competitor sequence

 4400- 11
 gpyaauggau ccacaucaac gaauucgagu cgagaacugg ugcgaaugcg aguaaguca 60
 cuuacagacu gaagaagcuu 80

 4210- 12
 4211- 62
 4212- DNA
 4213- Artificial Sequence

 4220-
 4223- competitive sequence

 4400- 11
 gpyaauggau ccacaucaac gaauucguag cguagaguau gagagagcca aggucagguu 60
 caauacagac ugaacgaagc uu 82

 4210- 13
 4211- 60
 4212- DNA
 4213- Artificial Sequence

 4220-
 4223- competitive sequence

 4400- 13
 gggaauggau ccacaucaac gaauucauca gggcuaaaga gugcagagu acuuaguca 60

8.5

- 4.2.4.
- 4.2.5. competitive sequence

```

-010- 11
-011- 30
-012- DNA
-013- Artificial Sequence

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0.20.
0.25. competitive sequence

```

L020:
L021:   misc_feature
L022:   (L7)..(56)
L023:   n=a,c,t, or g

```

04000	15		
gggaaggga	ccacacucac	gaauucnnnn	nnnnnnnnnn nnnnnnnnnn nnnnnnuuca
00000	80		
gggaaggga	ccacacucac	gaauucnnnn	nnnnnnnnnn nnnnnnnnnn nnnnnnuuca

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-210- 10
-211- 102
-212- CMA
-213- Artificial Sequence

```

•4123• Parental P6 construct

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caatccgtg	ctaaattgta	ggactgcacg	ggttctacat	aatgacctaa	cgactatccc	120
ttt						182

0210 17

0211- 24
 0212- DNA
 0213- Artificial Sequence

0220-
 0223- primer

0400- 17
 tttactctgt aatctatcta aacg

24

0210- 18
 0211- 24
 0212- DNA
 0213- Artificial Sequence

0220-
 0223- primer

0400- 1-
 cccggaattc tatccagctg catg

24

0210- 19
 0211- 94
 0212- DNA
 0213- Artificial Sequence

0220-
 0223- oligonucleotide

0400- 19
 acctcagtat aaggtgaatt ataattgtaa totatctaaa cggggaacct ctctagtaga

60

caatcccttg cttaaattgct aacgactatc cctt

94

0210- 20
 0211- 131
 0212- DNA
 0213- Artificial Sequence

0220-
 0223- oligonucleotide

0400- 20
 acctcagtat aaggtgaatt ataattgtaa totatctaaa cggggaacct ctctagtaga

60

caatcccttg cttaaattata ccagcatcgt cttgatgcc ttggcagata aatgcctaac

120

gactatccct t

131

0210- 21
 0211- 133
 0212- DNA
 0213- Artificial Sequence

4200+
 4203+ oligonucleotide

 4400+ 11
 ggttagtat aaggtgaatt ataattgtaa totatatataa cgggggaacct ctetagttaga 60
 caatcccttg cttaaattgat accagcatcg ttttgatgcc ctgggcagca taaatgccta 120
 agtaataacc att 133

4210+ 22
 4211+ 119
 4212+ DNA
 4213+ Artificial Sequence

4220+
 4223+ oligonucleotide

 4400+ 22
 ggttagtat aaggtgaatt ataattgtaa totatatataa cgggggaacct ctetagttaga 60
 caatcccttg cataaccagca togttttgat gcccttggca ggctaacaaga ctatccctt 120

4210+ 23
 4211+ 129
 4212+ DNA
 4213+ Artificial Sequence

4230+
 4233+ oligonucleotide

 4400+ 23
 ggttagtat aaggtgaatt ataattgtaa totatatataa cgggggaacct ctetagttaga 60
 caatcccttg ctaaatatac cagcatcgtc ttgatgccct tggcagtataa tgctaacaaga 120
 ctatccctt 133

4210+ 24
 4211+ 115
 4212+ DNA
 4213+ Artificial Sequence

4230+
 4233+ oligonucleotide

 4400+ 24
 ggttagtat aaggtgaatt ataattgtaa totatatataa cgggggaacct ctetagttaga 60
 caatccctta taaccagcatc gttttgatgc cttgggcagc taacgactat cctt 115

4210+ 25

42118 117
 42119 DNA
 42120 Artificial Sequence

4224
 4225 oligonucleotide

440 15
 4401 aggtgagtat aaggtgactt ataattgtaa ttatatctaaa cggggaaact ctctagtaga 60
 4402 aatcccggtg ataaccagcat cgtcttgatg ccttggcag cctaaccgact atccctt 117

42119 15
 42120 144
 42121 DNA
 42122 Artificial Sequence

4226
 4227 oligonucleotide

4400 16
 4401 ttagtataag gtgacttata ctagtaatat atctaaacgg ggaacctata taaccagcatc 60
 4402 tcttgatgac ccttggcaga gacaatcccg tgcataaattg taggactgcc cgggttctac 120
 4403 taaatgcat aacgaactat cctt 144

4210 17
 4211 140
 4212 DNA
 4213 Artificial Sequence

4228
 4229 oligonucleotide

4400 17
 4401 ttagtataag gtgacttata ctagtaatat atctaaacgg ggaacctata ccagcatcgt 60
 4402 cttagtgccc ttggcagaca atcccggtgt aaattgtagg actgcacggg ttctacataa 120
 4403 atgactaaag actatccctt 140

4210 18
 4211 107
 4212 DNA
 4213 Artificial Sequence

4229
 4230 oligonucleotide

4400 28
 4401 gtaattctatc taaacgggga acctctctag tagacaatcc cgtgctaaat tgataccagc 60
 4402 atcgtcttga tgcatttggc agcataaatg cctaaccgact atccctt 107

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 <218> 107
 <218> DNA
 <218> Artificial Sequence

<218>
 <218> oligonucleotide

<400> 29
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 atcgtcttca tgcctctggg tgcataaatg cctaacgact atccctt 107

<218> 30
 <218> 112
 <218> DNA
 <218> Artificial Sequence

<218>
 <218> oligonucleotide

<400> 30
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 caatcccggtg cttaaattgag atatgcttcg gcagaaggat aaatgcctaa cgactatccc 110
 tt 112

<218> 31
 <218> 114
 <218> DNA
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<218>
 <218> oligonucleotide

<400> 31
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 caatcccggtg cttaaattgag gatatgcttc gccagaaggc ataaatgcct aacgactatc 110
 cgtt 114

<218> 32
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 <218> DNA
 <218> Artificial Sequence

<218>
 <218> primer

<400> 32

dataatacga ctcaactataa tggcattacc gccttgt

37

42100 23
42110 26
42120 DNA
42130 Artificial Sequence

42200
42230 primer

44000 32
44010 tagctagaact tagctacaat atgaac

26

44100 34
44110 38
44120 DNA
44130 Artificial Sequence

44200
44230 substrate

44900 34
44910 aaaaaa aaaaaaaaaa aaugcacu

28

45100 35
45110 41
45120 DNA
45130 Artificial Sequence

45200
45230 clone sequence cyt7-2

45300
45310 misc_feature
45320 (37)..(47)
45330 n=a, c, t, or g

44300 35
44310 cggagcag gagagacgtc cttggaggag caagggnnnn nnnnnnngtc ttacagtcag

60

5 61

45100 36
45110 54
45120 DNA
45130 Artificial Sequence

45200
45230 clone sequence cyt7-6

45300
45310 misc_feature
45320 (14)..(17)

4223> n=a,c,t, or g

4400> 36

cagagcattt aggnnnnaag ggtgactett tagttaggct cccgtagtt tagg

54

4210> 37

4211> 51

4212> DNA

4213> Artificial Sequence

4220>

4221> clone sequence cyt7-1

4230>

4231> misc_feature

4232> (39)..(43)

4233> n=a, c, t, or g

4400> 37

cagagcattt agcgggcaag ggtgggatgt tgccttggn nngtcagtc tygcg

55

4210> 38

4211> 50

4212> DNA

4213> Artificial Sequence

4220>

4221> clone sequence cyt9-2

4400> 38

aggaaacccc agattgtgtc gggatgttat gogtcgttta ttgagattac

50

4210> 39

4211> 44

4212> DNA

4213> Artificial Sequence

4220>

4221> clone sequence cyt9-16

4400> 39

cagtaagttt atatcccgga gctaggtgct tcttgtggac agttatggg

49

4210> 40

4211> 50

4212> DNA

4213> Artificial Sequence

4220>

4221> clone sequence cyt9-18

4400> 40

gcacacagca ctatattgct tggtcggagc gtttcgttta ttgagtttac

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<210> 41
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<212> DNA
<213> Artificial Sequence

<240>
<241> clone sequence lys11-2

<220>
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<222> (13)..(23)
<223> n=a, c, t, or g

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taacgtctca tggctaaatt gcatgtntg ctacaaatga tatgactaga 50

<210> 41
<211> 50
<212> DNA
<213> Artificial Sequence

<240>
<241> clone sequence lys11-3

<400> 41
tadccaagac ttggtgacc ggtagtctt ctattaatga gatgacgaga 50

<210> 43
<211> 50
<212> DNA
<213> Artificial Sequence

<240>
<241> clone sequence lys11-28

<220>
<221> misc_feature
<222> (31)..(31)
<223> n=a, c, t, or g

<400> 43
taactccgcg acttaggaac gggtagctga ntaaaaatga tatgacgaga 50

<210> 44
<211> 51
<212> DNA
<213> Artificial Sequence

<240>
<241> clone sequence lys11-6

<220>
<221> misc_feature

0202+ (32)..(32)
 0203+ nna, c, t, or g

 0400+ 44
 tttaaaaaa gagaattggc agtaccgtgc tnggttcga gataacgaga 50

 0210+ 45
 0211+ 270
 0212+ RNA
 0213+ Bacteriophage T4 (wild type)

 0200+
 0203+ Group 1 theophylline-dependent (td) intron

 0400+ 45
 uagggguuuuu ugaggccaga guuuuaggug acuuuuuuuu guaaucuauc uaaacgggga 60
 accucucuaag uagacaauc ccugcuuuuu uguaggacug gddcbacuaa aaugccuaac 120
 gacuuuuccu uugggggagua gggucaagug acucgaaacg auagacaauc ugcuuuaaga 180
 aguuaggaguu auagucucuu ccgcauggug acaugcagcu ggauuuuuuu ccgggguaag 240
 auuaacgacc uuucugaac auuauuguaa 270

 0210+ 46
 0211+ 67
 0212+ RNA
 0213+ Artificial Sequence

 0200+
 0203+ GpITH1P6.131 aptamer construct

 0400+ 46
 uaaaaggggga accucucuaag uagacaauc ccugcuuuuu uauaccagca ucgucuuugau 60
 ggcuuuggca guuuuuuugc ua 82

 0210+ 47
 0211+ 64
 0212+ RNA
 0213+ Artificial Sequence

 0200+
 0203+ GpITH1P6.131 aptamer construct

 0400+ 47
 uaaaaggggga accucucuaag uagacaauc ccugcuuuuu uauaccagca aucgucuuuga 60
 ugccuuuuggc agcauuuuuug cuua 84

 0210+ 48
 0211+ 49

<112> RNA
 <113> Artificial Sequence

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 <121> portion of P6 region of the Group I ribozyme (Part I)

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 <110> 45
 <111> 30
 <112> RNA
 <113> Artificial Sequence

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 <121> Anti-theophylline aptamer

 <100> 45
 auaacagcau cguucucaug ccuuuggcag 30

 <110> 50
 <111> 10
 <112> RNA
 <113> Artificial Sequence

 <120>
 <121> portion of P6 region of the Group I ribozyme (Part II)

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 <110> 51
 <111> 130
 <112> RNA
 <113> Artificial Sequence

 <100>
 <121> LI ligase Aptamaze construct

 <100> 51
 guacuuagga ccagugcuag ugcacuagga cguucgacca uguggguccg cugccagcgg 60
 caauuggga ugcuaugcgg aaccuucaca ucuuagacag gagguuaggu gccucgugau 120
 guccagucuc 130

 <110> 51
 <111> 10
 <112> RNA
 <113> Artificial Sequence

 <120>
 <121> modified LI ligase Aptamaze construct (Part I)

4000 52
 ggaacucggc gaaagc 16

42100 53
 42110 30
 42120 RNA
 42130 Artificial Sequence

4220
 42230 modified LI ligase Aptamaze construct (Part II)

4400 54
 gagguagau gccucugau guccagucgc 30

44100 54
 44110 30
 44120 RNA
 44130 Artificial Sequence

4420
 44230 Ribozyme clone sequence cyt7-2

44400 54
 ggaacucggc gaaagccgga agcaaggaga gaaguccuug gaggagcaag gggucuuaca 60
 caacagugagg uuaggugccu cgugaugucc agucgc 96

44500 54
 44510 71
 44520 RNA
 44530 Artificial Sequence

4460
 44630 FMN1P6 theophylline-dependent (td) intron

44800 55
 uaaacgggga accucucuaag uagacaaucg cgugcuaaa uaggauaugc uucugcagaa 60
 ggaacaaucg cua 73

44900 56
 44910 75
 44920 RNA
 44930 Artificial Sequence

4500
 45030 FMN2P6 theophylline-dependent (td) intron

44000 56
 uaaacgggga accucucuaag uagacaaucg cgugcuaaa uaggauaug cuucugcaga 60

aggcauaaaau gccua

75

42108 57

42110 45

42112 RNA

42114 Artificial Sequence

42200

42202 B11 construct

44000 57

uaaaaggggga accucucuag uagacaaucc cgugcuaaaau gccua

45

42108 53

42110 54

42112 RNA

42114 Artificial Sequence

42200

42202 GpITH2P6 aptamer construct

44000 51

uaaaaggggga accucucuag uagacaaucc cgugcuaaaau ugauaccagc aucgucuuga

60

uggcucuggc agcauaaaag ccua

84

42108 54

42110 73

42112 RNA

42114 Artificial Sequence

42200

42202 GpITH3P6 aptamer construct

44000 59

uaaaaggggga accucucuag uagacaaucc cgugcauacc agcaucgucu ugaugcccuu

60

ggcagggga

70

42108 60

42110 80

42112 RNA

42114 Artificial Sequence

42200

42202 GpITH4P6 aptamer construct

44000 60

uaaaaggggga accucucuag uagacaaucc cgugcuaaaau auaccagcau cgucuucaug

60

cccuugggag uaaaugccua

80

42100 61
 42110 66
 42120 FNA
 42130 Artificial Sequence

 42200
 42230 GpITH5P6 aptamer construct

 44000 61
 AAAAGGGGGA ACCUCUCUAG UAGACAAUCC CGUAUACCAG CAUCGUCUUG AUGCCCUUG 60
 CAGGCUA 66

 42300 62
 42310 68
 42320 FNA
 42330 Artificial Sequence

 42340
 42370 GpITH6P6 aptamer construct

 44100 61
 AAAAGGGGGA ACCUCUCUAG UAGACAAUCC CGUGAUACCA GCAUCGUCUU GAUGCCCUUG 60
 GCAAGCCUA 68

 42400 63
 42410 69
 42420 FNA
 42430 Artificial Sequence

 42440
 42470 GpITH1P5 aptamer construct

 44000 63
 AAAAGGGGGA ACCUCUAUAC CAGCAUCGUC UUGAUGCCCU UGGCAGAGAC AAUCCCGUG 60
 UUAUUGUAG GAGUGCCCGG GUUCUACAU AAUGCCUA 93

 42500 64
 42510 94
 42520 FNA
 42530 Artificial Sequence

 42540
 42570 GpITH2P5 aptamer construct

 44000 64
 AAAAGGGGGA ACCUAUACCA GCAUCGUCUU GAUGCCCUUG GCAGACAAUC CCGUGC AAA 60
 UUGIAGGACU GCCCGGGUUC UACAUAAAUG CCUA 94

 42600 65

42110 84
 42120 RNA
 42130 Artificial Sequence

 42200
 42230 3MeX2P6 aptamer construct

 44000 65
 uaaaaggggga accucucuag uagacaaucc cgugcuaaaau ugauaccagc aucgucuuga 60
 ugocuuuggc agcauaaaug ccua 84

 42100 65
 42110 84
 42120 RNA
 42130 Artificial Sequence

 42200
 42230 Th2P6.D aptamer construct

 44000 66
 uaaaaggggga accucucuag uagacaaucc cgugcuaaaau ugauaccagc aucgucuuga 60
 ugocuuuggu ugcauaaaug ccua 84